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(71) Applicant
Teng-Hsien Kuo
No 144-2 Sec 1 Tung-San Road, Taichung City,
Taiwan, Province of China

(72) Inventor
Kuo-Liang Kuo

(74) Agent and/or Address for Service
D Young & Co
10 Staple Inn, London, WC1V 7RD, United Kingdom

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(54) Cues

(57) A cue includes a wooden posterior portion 20 and an anterior portion 10 made of a foamed core and a fibre reinforced plastics shell. The resulting cue has the desirable striking characteristics of wood as well as the greater strength and increased temperature and moisture resistance of plastics.

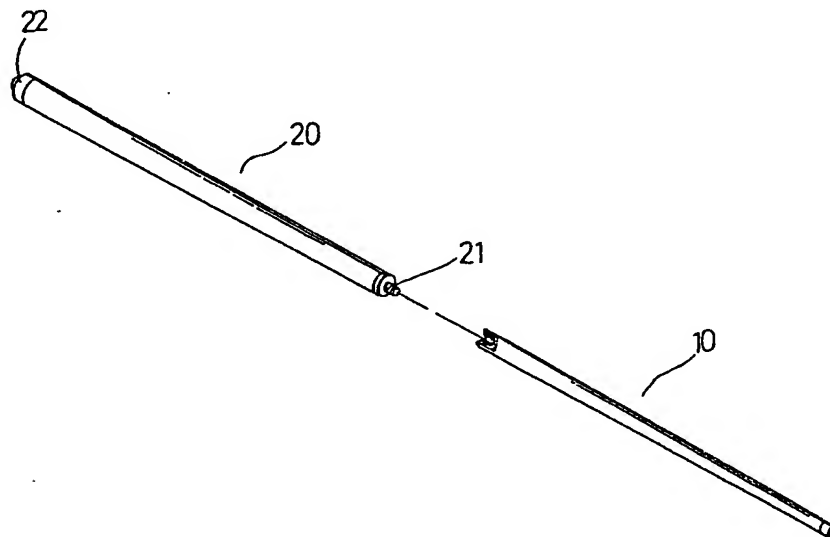


FIG. 1

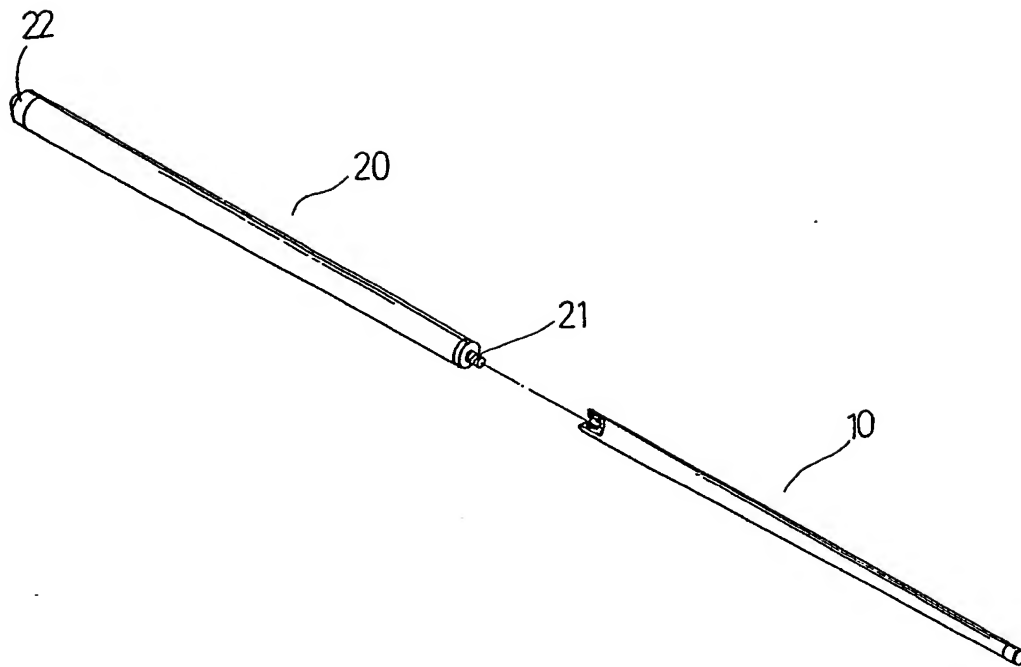


FIG. 1

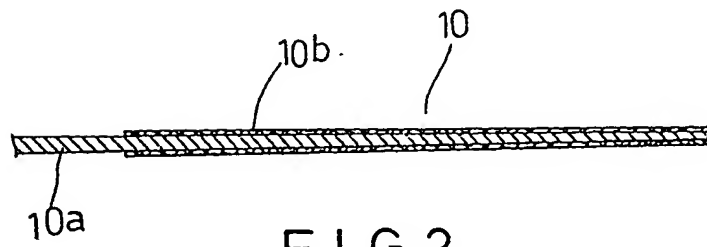


FIG. 2

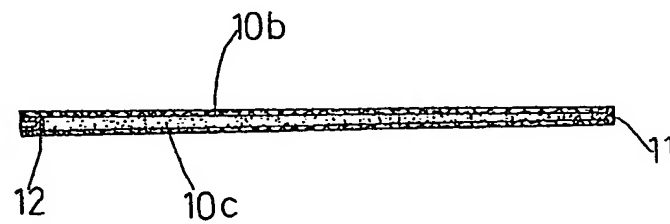


FIG. 3

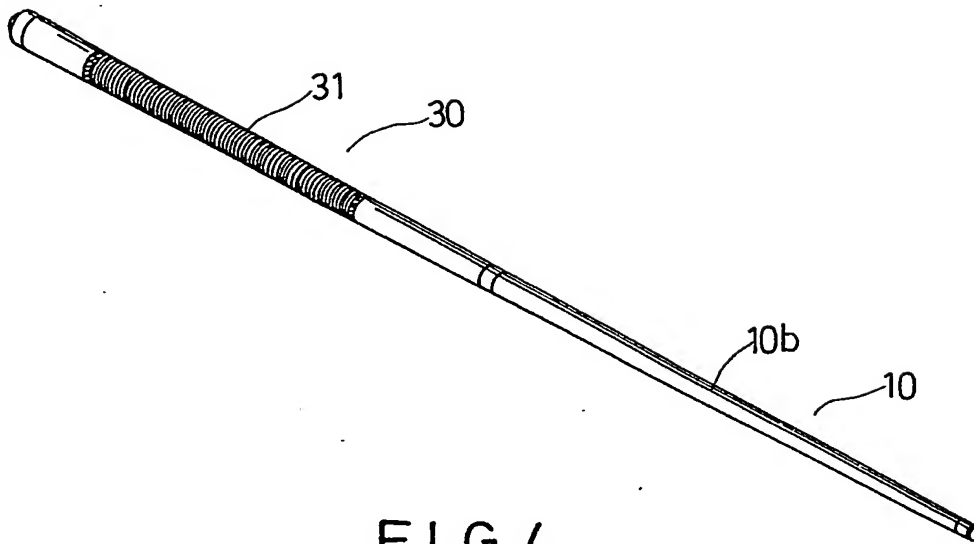


FIG. 4

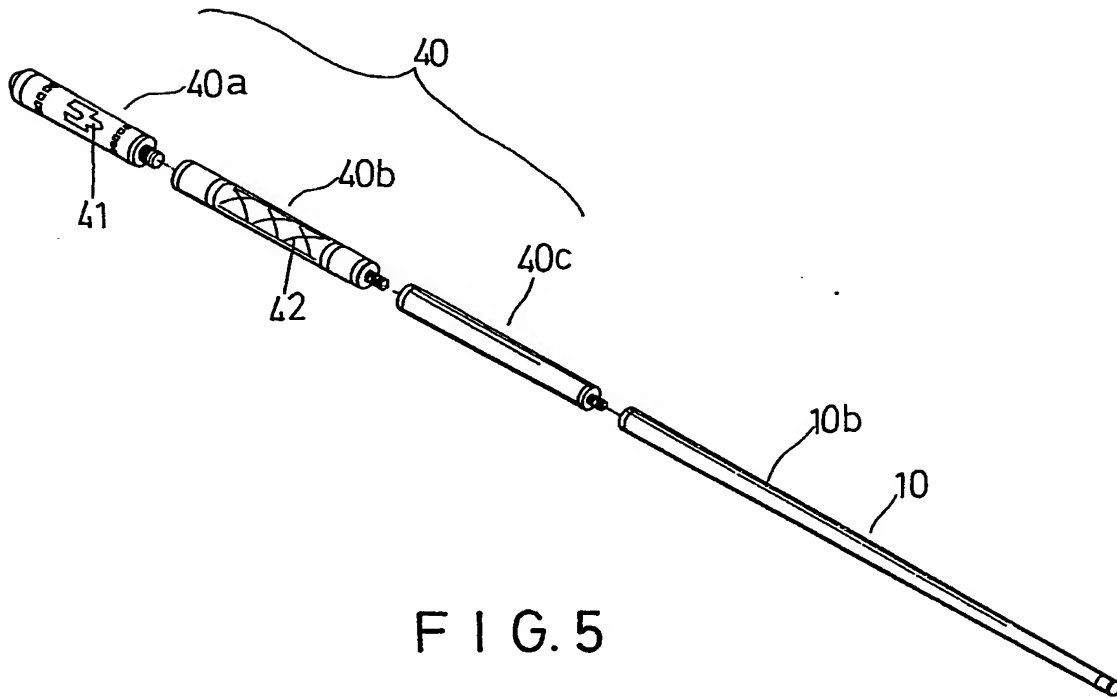


FIG. 5

CUES

This invention relates to cues, such as those suitable for playing billiards, snooker or pool.

5 Various cue constructions have been developed for the purposes of improving the flexural strength and weight balance of cues. The earliest cues were made of wood. However, despite the desirable striking characteristics possessed by wooden cues, it became evident that environmental temperature and humidity adversely effected their
10 flexural strength and straightness after only a short period of time. Thereafter, plastics cues were designed. Although these cues have improved flexural strength and good resistance against temperature and humidity effects, the striking characteristics thereof are inferior when compared with those of wooden cues. Generally speaking, the
15 preferred weight of a wooden cue is about 18 to 21 ounces (0.51 to 0.60 kg). To produce a composite plastics cue of the same weight would not be economical as the cost would be at least about 4 to 5 times that of a wooden cue. Moreover, a composite plastics cue cannot be ornamented such as by engraving for the purpose of collection.

20 According to one aspect of the invention there is provided a cue comprising:

an elongate anterior portion which includes a foam core and a fibre reinforced plastics shell, said anterior portion having a front striking end and a rear joint end; and

25 at least one posterior portion which is made of wood and which has a rear butt and a front joint end connected to said rear joint end of said anterior portion.

According to another aspect of the invention there is provided a cue comprising:

30 an elongate anterior portion which includes a foam core and a fibre reinforced plastics shell, said anterior portion having a front striking end and a rear joint end; and

a plurality of successively interconnected posterior portions, one of said posterior portions being connected to said rear joint end
35 of said anterior portion, at least one of said posterior portions being made of wood, and the or each remaining posterior portion being made of a composite plastics material which has a foamed core and a fibre

reinforced plastics shell.

A cue embodying the invention has improved flexural strength, improved resistance against temperature and humidity effects, good striking characteristics and the capability of being engraved.

5 The invention will now be described by way of example with reference to the accompanying drawings, throughout which like parts are referred to by like references, and in which:

Figure 1 is a partially exploded perspective view of a cue constructed according to one embodiment of the present invention;

10 Figures 2 and 3 show how the plastics anterior portion of the cue shown in Figure 1 is fabricated;

Figure 4 is a perspective view of a cue similar to that of Figure 1 but having an engraved pattern; and

15 Figure 5 is a perspective view of a cue with three posterior sections.

Referring to Figures 1, 2 and 3, an embodiment of the present invention is shown, having an anterior portion 10 made of a composite plastics material and a posterior portion 20 made of wood. The posterior portion 20 is tapered towards the anterior portion 10 between a rear butt 22 and a front screw 21 incorporated therein. The anterior portion 10 is tapered towards its striking tip 11 and includes a foamed core 10c and a fibre reinforced plastics shell 10b. The shell 10b may be fabricated by impregnating woven fibre sheets with a resin such as polyurethane resin or any other suitable resin, 25 wrapping the impregnated fibre sheets around a mandrel 10a, then heating and curing the impregnated fibre sheets in a mould. The cured shell 10b is then filled with a foam material, such as polyurethane foam or any other suitable foam, after the mandrel 10a has been pulled out therefrom. The foam is then cured by heating in the shell, 30 thereby forming the foamed core 10c in the shell 10b.

At the rear end of the anterior portion 10 is a screw element 12 having an internal thread. The anterior portion 10 and the posterior portion 20 are connected together by the engagement of the screw 21 with the screw element 12.

35 It may be appreciated that the wooden posterior portion 20 offers good striking characteristics and a weight balance for the cue and the composite plastics structure of the anterior portion 10 offers

good strength in spite of its thin configuration, so that the anterior portion 10 does not easily break or deform due to temperature and humidity changes.

Moreover, like conventional wooden cues, a cue embodying this invention can be ornamented by engraving the posterior portion of the cue, for example as in a posterior portion 30 of a cue shown in Figure 4 having a pattern 31. This is also an advantage made possible by the invention that cannot be achieved by conventional composite plastics cues.

Figure 5 shows a cue which includes an anterior portion 10 similar to that shown in Figure 1, and three posterior portions 40a, 40b, and 40c. The posterior portion 40c may be fabricated in the same manner as the anterior portion 10. The remaining posterior portions 40a and 40b are made of wood and have respective patterns 41 and 42.

It will be apparent that various modifications and variations can be made to the constructions as previously described without departing from the scope of the invention. It is therefore intended that the invention be limited only as indicated in the following claims.

CLAIMS

1. A cue comprising:

an elongate anterior portion which includes a foam core and a
5 fibre reinforced plastics shell, said anterior portion having a front
striking end and a rear joint end; and

at least one posterior portion which is made of wood and which
has a rear butt and a front joint end connected to said rear joint end
of said anterior portion.

10

2. A cue comprising:

an elongate anterior portion which includes a foam core and a
fibre reinforced plastics shell, said anterior portion having a front
striking end and a rear joint end; and

15 a plurality of successively interconnected posterior portions,
one of said posterior portions being connected to said rear joint end
of said anterior portion, at least one of said posterior portions
being made of wood, and the or each remaining posterior portion being
made of a composite plastics material which has a foamed core and a
20 fibre reinforced plastics shell.

3. A cue substantially as hereinbefore described with reference to
the accompanying drawings.